

SOCIAL IMPACTS OF LNG

REPORT TO THE PEMBROKESHIRE HAVEN SPATIAL PLANNING GROUP

November 2005

Ref: KW/JB

SECTION 1: INTRODUCTION

Spatial Plan consultations for the Pembrokeshire Havens Spatial Plan area highlighted LNG impacts as a key issue and there was a widespread concern that developments taking place in the UK national interest were having adverse, but unquantified impacts on the community and on local services.

A scoping report was produced for the ministerial meeting on 20 July 2005 which set out the likely scale of activity and some of the principal impacts, following consultation with the Community Planning partnership in Pembrokeshire and Carmarthenshire County Council. It was agreed that a more detailed analysis of potential impacts and associated issues be presented to the Ministerial Group meeting on 1 December 2005 together with an Action Plan. It is widely acknowledged that the development of LNG facilities and a wider cluster of energy related industry will have both positive and negative impacts on the local community.

Job Centre Plus and ELWa are addressing the skills and training needs of the new employment opportunities and how to maximise beneficial impacts in the short and longer terms. The PBI Energize project is working closely with the WDA to maximise supply chain opportunities and to exploit experience provided by the LNG programme to local businesses.

This paper complements others dealing with skills, training, inter-trading and the environment and seeks to identify how best to maximise social benefits and minimise negative social impacts from LNG and the related energy cluster.

TABLE 1: ENERGY RELATED CONSTRUCTION PROGRAMME

	Timescale	Cost (£m)
South Hook LNG terminal Phase 1 + 2	Mar 05 – Dec 09	580

Dragon LNG terminal	Oct 04 – Dec 07	260
RWE N Power, Power Station	Jan 07 – Nov 09	700
Milford Power, Power Station (est only)	Tbc	650
Transco Pipeline	Mar 06 – Mar 07	180
Texaco Refinery maintenance shutdowns	Autumn 06 – Autumn 09	Tbc
Total Refinery maintenance shutdowns		Tbc
Marathon Oil	Viability not confirmed	
Energy Technium	Jul 05 – Sep 06	10
CHP refurbishment at Dragon site		19

The current confirmed construction programme at the LNG plants extends from October 2004 to December 2009. RWE npower anticipate that the construction of a 2000MW power station will fall within this period ie approximately 3 years Jan 2007 – Nov 2009. Milford Power have withdrawn their application for a 1600MW power station at the Dragon Site and are believed to be considering the option of submitting a larger 2000MW power station.

Marathon have drilled a proofing well off-shore and determined that there is insufficient gas to be viable. Discussions will continue with Marathon to establish whether there are other options or development interests.

The existing refinery capacity and establishment of major gas supplies and possible power generation may generate further development opportunities and value added activities. The WDA have agreed to carry out land availability assessments at key sites around the Milford Haven Waterway and to explore in more detail value added opportunities. Planned maintenance programmes at the refineries will create additional construction pressures in the autumns of 2006 and 2008 and in the Spring of 2009.

SECTION 2: EMPLOYMENT IMPACTS AND IN-MIGRATION

The employment impact and level of imported labour has been the subject of much speculation. Figures published as part of the impact assessments could not accurately differentiate between local and imported labour and construction plans have evolved over time. This analysis of local and in-migrant employment is based on recent discussions with main contractors and project sponsors. The figures should be treated with caution as there will inevitably be further changes over time including the effect of labour market

pressures from within and outside the Spatial Plan area, plus the influences of bad weather, industrial disputes and other external factors. In the following table 'local' refers to workers with a permanent address within a radius stretching from Milford Haven to Swansea, travelling men are in temporary accommodation.

TABLE 2: ANALYSIS OF EXISTING AND POTENTIAL EMPLOYMENT											
Source: D Fellows - survey of main contractors)											
	DRAGON (70% local)	S HOOK (65% local)	RWE (50% local)	npower (50% local)	MILFORD POWER (50% local)	TRANSCO (30% local)	CHEVRON (30-40% local)	TOTAL/FINA	TOTAL ALL (excluding TRANSCO)		
	L Loc al	Travelli ng al	Loc al	Travelli ng al	Loc al	Travelli ng al	Loc al	Travelli ng al	Loc al	Travelli ng al	Combin ed
2005	Q4 310	130	350	150					660	280	940
2006	Q1 350	150	600	250		5	20		950	400	1350
	Q2 390	160	650	350		150	350		1060	510	1570
	Q3 420	180	750	400		300	700		1170	580	1750
	Q4 350	150	850	450		300	700	400	800	1600	3000
2007	Q1 280	120	850	450		150	350		1130	570	1700
	Q2 210	90	600	300		15	35		810	390	1200
	Q3 140	60	550	250					710	340	1050
	Q4 80		450	250					580	300	880
2008	Q1 60		250	150	20				660	400	1060
	Q2 60		250	150	50				730	580	1310
	Q3 60		150	100	250				101	850	1860

2009	Q4	60	80	400	600	20	350		400	1000			0	1490	1950	3440
	Q1	60	80	550	600	200	500						1240	1100	2340	
	Q2	60	80	600	550	350	600						1590	1850	3440	
	Q3	60	80	600	400	500	600			300	700	1140	1000	2140		
2010	Q4	60	80	550	250	600	550						940	800	1740	
	Q1	60	80	400		600	400						615	400	1015	
	Q2	60	80	250		550	250						465	250	715	
	Q3	60	80	75		400							290	0	290	
2011	Q4	60	80	75		250							290	0	290	
	Q1			75		75										
	Q1Q2			75		75										

SECTION 3: SOCIAL IMPACTS

The principal social impacts of LNG are considered under the following headings:

- Community perceptions
- Labour
- Housing
- Health
- Road, rail and air
- Marine

- Crime and disorder
- Fire Service
- Local government
- Emergency planning

The format of this report will be to

1. Evidence as far as possible the scale and nature of the social impacts
2. To quantify where possible any cost implications
3. To identify actions which will help to maximise positive impacts and help to minimise negative impacts on the local community in the short and longer terms (soft landing).

A. COMMUNITY PERCEPTIONS

To provide definitive evidence of community perceptions would require a major survey and would no doubt change over time in response to perceived costs and benefits.

Local perceptions may be influenced by a number of factors, including:

1. Comprehensive community surveys undertaken by the County Council in recent years have highlighted the need for more, better paid employment opportunities and a more stable local economy as a key issue
2. Increased in-migration particularly amongst the retirement cohorts is often associated with a particular resistance to change
3. In the aftermath of the Sea Empress there is an increased awareness of the importance of effective risk management and an understandable concern that gas is potentially an explosive substance.
4. The Federation of Small Businesses survey indicates the majority of their members support current energy developments.
5. Rapid house price inflation and increased demand has highlighted affordable housing as a major local issue.

The County Council's emergency planning team maintain a press cuttings file on LNG related issues and a broad analysis of the main subject matter covered is as follows:

Housing 10

Pipeline 10

Safety 26

General Information 18

Labour 2

Legal challenge 8

Roads 3

Environment 1

Others 4

From this simple analysis, concern about safety is the single most important factor and extends from the general concern about the impact of a gas leak to the cumulative effect of an explosion. The recent leakage of paraffin from the existing storage tanks on the Dragon site has exacerbated some peoples' worries. There are also concerns about road safety issues and disruption in some of the villages adjoining the LNG developments and about the personal safety of residents, particularly at night.

Such concerns have resulted in action groups being set up to articulate and represent the worries of some residents. These include an Action Group representing residents of Waterston, at the main entrance to the Dragon site and the Safe Haven Group which has vigorously campaigned for reassurances on safety issues and sought to initiate judicial reviews.

Such campaigns have been fully reported in the local media and despite significant efforts by both the relevant public bodies and the companies to provide appropriate information and community liaison, in some instances a climate of suspicion and confrontation has been created.

Additional concerns that have also been widely reported in the local and national media include:

- Concern about the rapid increase in homelessness and house price inflation that has been associated with the construction projects
- Concern about the line and impact of the Transco pipeline and its potential impact on traffic, the environment and farm incomes
- Concern that the massive disruption and investment will only have a modest impact on permanent new employment.

It is an unfortunate fact of life that bad news and controversy is more newsworthy than good news and there is a need therefore to try to ensure that comprehensive and accurate information is presented to the local media and general public at as early a stage as possible. This may require 1) some better co-ordination of the various projects to ensure that cumulative as well as individual impacts are effectively communicated and that concerns are responded to accurately and effectively and 2) a better communication

of the 'National Interest' argument and the importance of these developments to the UK economy.

B. LABOUR IMPACTS

There are a number of factors which will effect the scale and type of impacts that LNG will have on the local labour market, including:

The nature and timing of developments (see Table 1)

The anticipated breakdown of local and imported labour (see Table 2)

Two factors may have changed since the original employment profile produced by Energize.

1. The Power Station construction programme is likely to overlap with LNG terminal construction programmes to a lesser extent than originally anticipated
2. The percentage of local labour employed may be higher than originally anticipated

There is still some uncertainty concerning precise numbers, particularly as evidence from the 'housing demand' side indicates a stronger demand from in-migrant workers than the figures in Table 2 might suggest.

Table 3 is attached as Appendix 2 and shows the most recent best estimate of labour demand presented as a graph and based on a recent survey by Danny Fellowes.

Key Conclusions

1. The LNG plants will have a peak labour requirement in excess of 1500 between Spring 2006 and 2007, of which 500-600 are likely to be in-migrant workers. This lower number is thought to be due in part to a significant number of locals who regularly work out of County, returning home
2. The maintenance shut-down at Chevron/Texaco in October/November 2006 will require an additional 1200 workers (and may be as many as 1600)
3. For impact assessment purposes it is assumed that both power stations will proceed, have a labour requirement in excess of 1500 from mid 2008 to the end of 2009 and peak at approximately 2300 workers
4. An additional Chevron/Texaco shut-down in Q4 2008 and a total shut-down in Q2 2009 would coincide with the Power Station programmes and require an additional 1000+ workers on each occasion

5. The Transco contract will last 12 months, Spring 1006 – 2007 and employ up to 1000 men. The bulk will be specialist travelling men and accommodation will be based in Carmarthenshire.

The skills and training needs and opportunities to reduce economic inactivity will be dealt with by ELWa and Job Centre Plus.

Given the constantly changing situation and the potential impact on local SMEs of the variable labour demand and relatively high wages on local construction sites, it is important that accurate information is available to assist SMEs make informed decisions. Business Eye should be given flexibility to establish effective local business intelligence gathering systems and mechanisms for local dissemination of information. Information should also be aggregated regionally to assist strategic planning at a higher level.

B. HOUSING IMPACTS

General

Pembrokeshire and adjoining coastal rural communities generally have a relatively small housing stock, higher levels of second home ownerships, high level of in-movers for retirement and low wages, which in normal circumstances create enormous pressures in the local housing market for rental and purchase. Affordability of housing for local residents is a problem. The Chartered Institute of housing policy briefing "Young Working & Homeless Identified Pembrokeshire as having the second highest house price to income ratio in Wales in 2004.

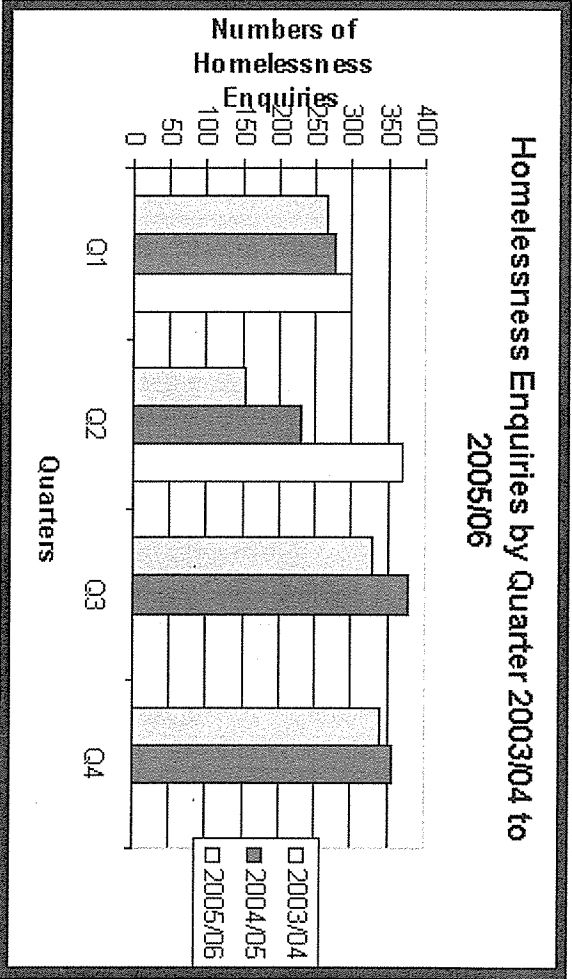
The declining housing stock resulting from Right to Buy will continue to exacerbate the position in future years.

Given the lack of quantifiable evidence on housing impacts in the private sector, a series of telephone interviews were undertaken, initially in Milford Haven and subsequently further afield these are attached as Appendix 1. It is clear from the interviews with Estate Agents that the construction projects are having a significant impact on the local housing market by:

- Stimulating the buy to let market for construction workers
- Increasing house prices by up to 20% for properties below £150k
- Increasing rental levels with a knock-on effect on homelessness.

There is also a suggestion that much of the rental revenue was not returned to the local market suggesting external speculative investment in the market.

The latest Land Registry data shows that semi-detached and terraced property prices in the Milford Haven area have risen at about twice the rate seen across Wales.



Closer analysis of the reason for the homelessness shows an increase in the numbers of homeless applications as a result of loss of private rented sector accommodation during the same period (see chart below). Anecdotal evidence from homeless customers indicates that a number of landlords have terminated tenancies to let to LNG workers at higher rents than can be paid by the former tenants.

TABLE 5:

	Milford Haven area (SA73 2&3 postcodes)	Wales
Semi detached	13.6%	6.6%
Terraced	18.4%	9.6%

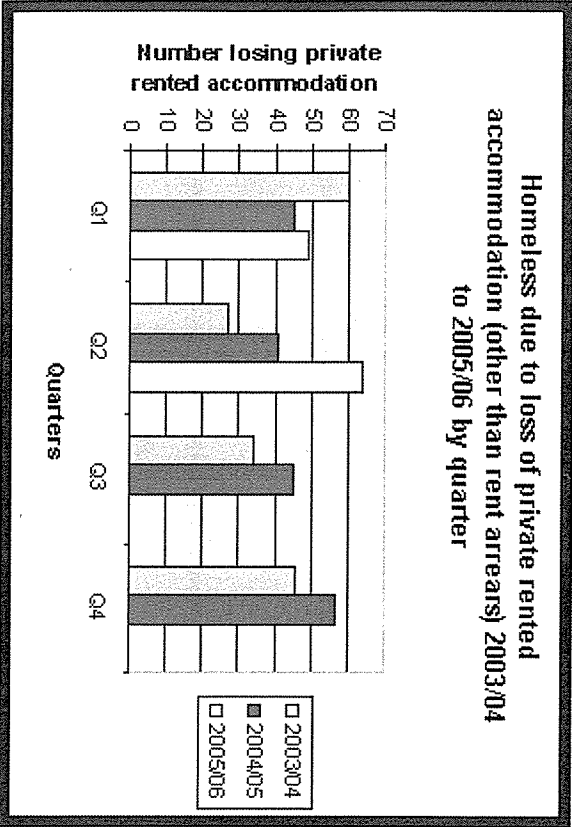
(Source: Land Registry Data (Jul-Sep 2005 and Jul-Sep 2004)

Homelessness

Public sector provision of accommodation is reducing year on year with total tenancies in 2002/03 totalling 8282 and in 2004/05 totalling 7862. The County Council's tenancies reduced from 6332 to 5848 with a small increase in Pembrokeshire Housing Association and Cantref tenancies.

The numbers of homelessness applications received by the Council have been increasing steadily year on year. During July to September (Q2 2005), the number of applications increased substantially at a time when a reduction in applications would have been expected compared to the previous quarter (see chart below)

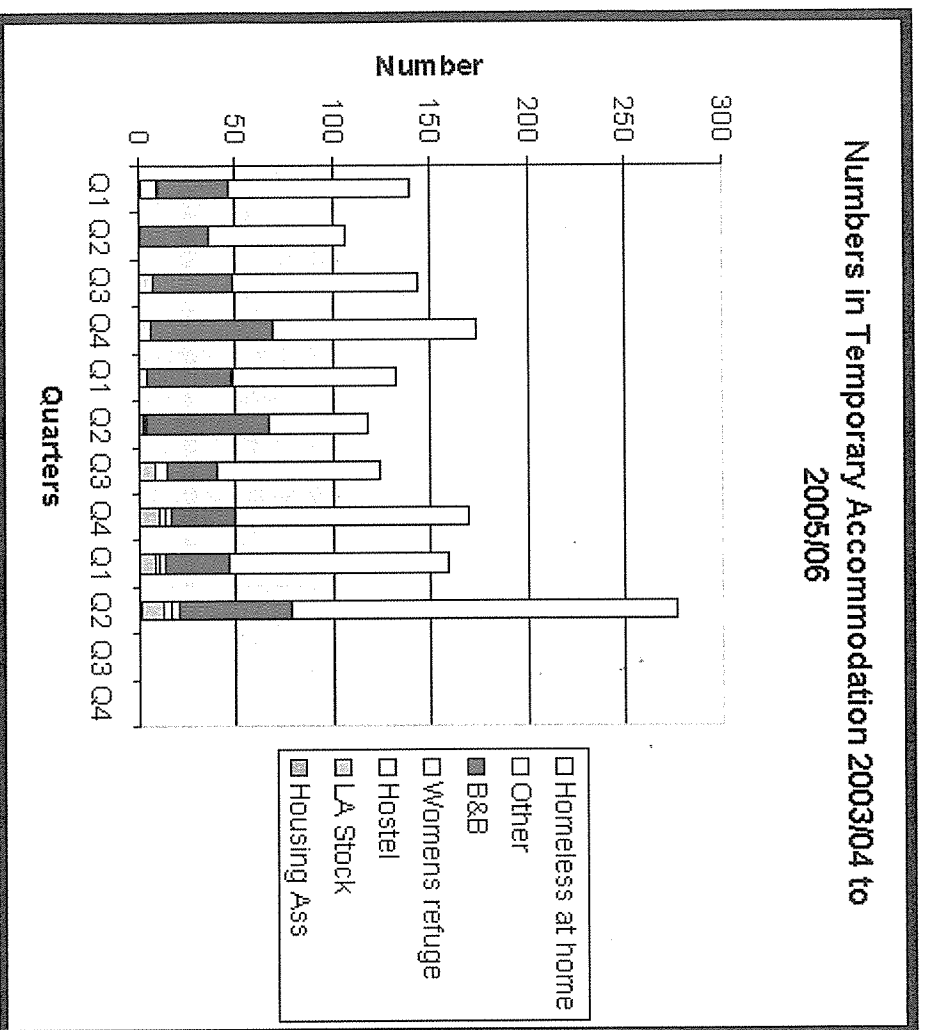
TABLE 4:



The most dramatic impact has been on the numbers of households placed in temporary accommodation at the end of September 2005 compared to any other time in the last three financial years. This is due to a lack of affordable private rented sector accommodation and an insufficient and reducing turnover of social housing stock.

TABLE 6:

Numbers in Temporary Accommodation 2003/04 to 2005/06



Conclusion

From the analysis in Table 2 there would appear to be an on-going requirement for approximately 500-600 bed spaces during the LNG phase and doubling if both power stations proceed. Figures may be supplemented by:

- Pembrokehire returners also requiring accommodation
- Short term specialist sub-contractors' requirements
- It is estimated that approximately 10% may bring families
- Maintenance shut-downs at the refineries will require additional bed spaces for 1-2 months.

It has not been possible to reconcile this assessment of demand against a quantifiable supply of accommodation.

In Carmarthenshire, Transco are in discussion with the County Council about the possibility of establishing a work camp to house travelling men on the Transco contract.

Despite the difficulties in obtaining precise information on the wider housing situation it is clear that there is a rapidly deteriorating position for the homeless which must be addressed as a matter of priority. There is also a concern that there may be wider impacts on recruitment in the health and other key sectors.

Pembrokeshire County Council will work with WAG to review options to provide short term solutions to the homelessness problem as well as considering the wider issues of affordable housing in a low wage economy.

In the longer term it will be important to review accommodation options for the power station projects to include work camp options. There has been a work camp previously on the Pembroke Power Station site.

B. HEALTH

The Local Health Board report that there has been no significant increase in demand for GP services with registrations at individual practices generally less than 10-15. Whilst main contractors were requested to make private arrangements for dentistry, it is unclear as to whether such arrangements were put in place.

The Health Trust has advised that there is some capacity to deal with a modest influx of migrant workers given the patterns of seasonal demand in the area, however there may be times during the summer when resources may be stretched. It will be necessary to review major incident emergency planning processes to ensure that health services can meet any new risks that may be identified from energy related developments.

There is a concern however that the lack of affordable properties to purchase or for rent is having a detrimental effect on recruitment within the Health Service.

Ambulance

The Ambulance service had identified the need for a paramedic/EMT crew and a fully equipped ambulance when an early calculation suggested a population increase of 3,000 – 4,000 men. This early assessment will now require review in terms of numbers and ambulance response times.

E. TRANSPORT

The County Council has undertaken an initial preliminary assessment of traffic impacts based on information available in September 2005. This information indicated up to 20,000 additional movements per day at peak and will be further reviewed to take account of power station traffic as additional details become available.

A number of projects have been identified and issues raised as part of the review (see attached map).

1. There is a need for a strategic road network of sufficient capacity to service the Milford Haven Waterway which will be the UK's second largest port and largest concentration of energy supply.
2. A comprehensive review of the needs, opportunities and strategic importance of the Milford Haven Waterway to the Welsh and UK economy is required to specify how an integrated transport network might operate. This should include a review of the trunk road network and by-pass provision or improvements for Milford Haven, Johnston, Haverfordwest and Pembroke to take account of abnormal loads, as well as rail freight connections.
3. Construction has begun on the provision of traffic lights at Merlins Bridge which will help to relieve serious congestion at peak periods.

Additional schemes which will be affected by LNG developments and should be considered in the short term include:

4. Steynton crossroads and Sunnycroft junction – improvements are at the design stage.
5. Marble Hall crossroads and Combes Road junction report should be reviewed to take account of the impact of LNG related traffic.
6. Bulford Road should be widened to standard two-way carriageway width as it carries an increasing volume of two-way traffic, particularly heavy vehicles.
7. Hamilton Terrace/Victoria Rd., and St Lawrence Hill pedestrian crossing improvements are programmed.
8. Various costed improvements in Pembroke linked to the proposed RWE npower developments.

Officers of the County Council have met with WAG officials to discuss some of these issues and in particular the long lead-in times required for substantial improvements. A South West Wales Regional Transport Strategy is being developed by SWITCH in association with WAG

Public Transport – Bus and Rail

A preliminary assessment of public transport impacts has not identified any significant capacity issues. However, in Milford Haven and Pembroke Dock there is a lack of a public transport intermodal focal point for all transport services, which should be addressed.

Generally main contractors can be expected to arrange a contract directly with a bus operator where there is an identified need.

Rail Freight

Given the strategic nature of the Milford Haven Waterway for marine, port and energy activities, it is important to protect and retain rail freight links. Current proposals at Trecwn to establish a rail freight facility may also be relevant to the proposed Strategic Review of transport needs and opportunities.

Air

Haverfordwest Airport provides an important facility for rapid transport connections and has historically been well used by the oil, marine and military services. The nature of demand for air services is changing but continue to grow and the charter services at the airport continue to expand.

There are constraints to further expansion at the airport that need to be addressed if it's full potential is to be realised for the wider Pembrokeshire economy.

F. MARINE

LNG is significant to the Milford Haven Port Authority not only because of the additional income and employment that it will generate, but also because it will help to diversify the role of the port and make it less dependant on any one activity.

Whilst there will only be a 7% increase in the number of ships the size of the vessels will require additional pilotage and an increase in the number of large tugs. It is anticipated that between 25-40 additional staff will be employed on the water.

The construction programmes will also require the use of waterfront yards and marine services some of which are owned by MHPA.

The Port Authority is a Trust Port and is committed to working in partnership to support the growth of the local economy. The County Council is currently reviewing the marine leisure sector in the County and is discussing with the Port Authority whether they will be able to enhance their services to marine leisure users as a core component of the Waterway Recreational Plan and as a result of additional revenue from LNG.

G. CRIME AND DISORDER

The nature of construction work, the age cohort and lifestyle of many of the travelling men is such that the incidence of crime is likely to be higher than for the population as a whole.

Between May and October 2005 the police have had to attend approximately 30 incidents that have occurred as a direct result

of LNG construction ranging from allegations of theft to rape.

A typical offence resulting from a suspicion of indecent assault involved 120 hours of investigation at a cost of approximately £1,850, interpreter's costs of £5,000 and custody costs in excess of £2,000. The cost of this one investigation totalled approximately £9,000.

The police have expressed concern about ensuring that there are sufficient additional resources to address additional crime and disorder resulting from LNG related construction, rather than dilute the quality of service elsewhere.

A briefing paper has been produced for the Chief Constable which was based initially on an assumption of up to 3000 travelling men. This figure is likely to be too high in the light of the revised labour analysis. The Paper indicated an additional staffing requirement of 4 sergeants and 17 constables to meet National/Force requirements for the efficient and effective provision of policing services in the area and an additional 16 members of staff to address LNG related policing.

H. FIRE SERVICE

The Mid and West Wales Fire and Rescue Service has comprehensive and proven safety and fire fighting plans relevant to the oil refining industry. These have been in place for many years and continue to be kept under review.

The capability of a large-scale fire service response has been practised and evolved at major events. Existing and planned arrangements are deemed to be at an appropriate level to support fire-fighting operations involving Liquefied Natural Gas.

The Fire Service acknowledges the significant variations in the chemistry and process between the existing oil industry and the proposed LNG developments. However the established manner of large-scale fire service mobilisation and the quantity of resources required for an appropriate response is not presently deemed to vary from the current level of response available.

In acknowledging the variations in the process and chemistry of Liquefied Natural Gas in comparison to the traditional oil industry the Fire Service is actively reviewing its training of personnel in preparation for the start of the LNG industry.

To this end the fire service has identified the following four-stage training programme appropriate to LNG. These stages follow closely with the proven pattern of training and familiarisation with the existing oil industry.

1. Introduction to the physical properties and industrial processes of LNG
2. Site familiarisation with emphasis on fixed installations and site procedures
3. Familiarisation with the shipping and marine installations
4. Practical exercises on a local and wider level (including specialist training at an established LNG training facility).

Proactive discussions are continuing to be held with the LNG construction representatives to address issues of site access and familiarisation as well as the weight restrictions and procedures specific to the marine risk.

The various departments of Pembrokeshire County Council are addressing the local issues of housing. The Fire Service Community Safety Department remains available to advise on the legislative fire safety requirements arising from the demand for additional accommodation.

The Fire Service Integrated Risk Management Plan detailing various stages of reorganisation within the Fire Service has taken the LNG development into account. This has ensured that stations and appliances relevant to the need of the local community remain trained and equipped to deal with issues potentially arising from oil refining and LNG industrial sites.

I. OTHER LOCAL GOVERNMENT SERVICES

In addition to housing and transport services, the Council has been or will be affected by LNG related activity and other major projects in a number of other ways.

Planning

The County Council and the Pembrokeshire Coast National Park Authority are both affected by LNG related developments. The fee received in respect of the LNG terminals was:

Exxon site, National Park £16,620

Exxon and Dragon sites, PCC £33,880

The estimate of costs involved in processing these applications, and preparing evidence for Judicial Review, instructing solicitors etc is as follows:

PCC	in-house legal costs	40,000
	External legal costs	32,000
	Other staff costs	£80,000
	Total	152,000

PCNPA External legal

£100,000

(excludes internal staff costs)

Note: These costs are in addition to an estimated £45,000 to PCC and £55,000 net to PCNPA of costs incurred in respect of the Bluestone Holiday Village planning application and review. PCNPA estimate that at least 1.5 work years has been taken up in dealing with both Reviews. The total costs to both Authorities could increase considerably in the future. The Milford Haven Port Authority have also incurred costs of approximately £89,000 to date on legal fees associated with the Judicial Review.

PCNPA were awarded full costs of £100,000 in respect of the LNG judicial review but as the applicants were in receipt of legal aid no costs were forthcoming. It is considered inappropriate for local Council taxpayers to have to bear the cost of processing applications which are clearly developments needed in the 'National Interest'.

Waste Disposal

Any increase in resident numbers will have a proportionate impact on the waste system. Evidence to date indicates that recycling initiatives are disregarded in many properties occupied by in-migrant workers and 1-2% increase in temporary residents will make recycling targets more difficult to achieve.

Education

The adult education service has seen a significant increase in English language tuition across a wide range of European and Eastern languages.

Capital Programme

It is estimated that current construction activity has resulted in a significant increase in construction costs of around 25% over the last year. It is difficult to determine the exact increase due to contractors picking and choosing which projects they are prepared to tender for. There was a period in 2004 when some schemes failed to attract any tenders as local contractors had sufficient work on their books. Some School projects saw the cost of construction per square meter double over a 3 year period however other

attractive projects (e.g. Fishguard Leisure Centre) attracted competitive tenders with a modest premium of around 6%.

Public Protection Services

LNG and wider energy related developments will result in increased shipping movements and there is likely to be a resource impact for the Port Health and Pollution Control/Environmental monitoring services.

F. EMERGENCY PLANNING

The transportation, handling and storage of LNG, along with the subsequent distribution of high pressure gas, will lead, and indeed is already leading to significant pressures to ensure effective and transparent emergency planning arrangements within the county.

The potential risks of LNG and in particular relating to a catastrophic incident, though highly unlikely is already causing considerable concern within some communities neighbouring the installations, as well as the wider population within Pembrokeshire. (This is evidenced through media articles and letters forwarded to and collected by the Emergency Planning Unit). In addition to accidental scenarios, a fear also exists that major incidents could arise as a consequence of deliberate terrorist action or a knock on or "domino effect" from incidents at nearby refineries/oil storage facilities.

The on-site operations and subsequent off-site impacts of any incident should be largely addressed through the Control of Major Accident Hazards (COMAH) Regulations and in the distribution process of the Pipeline Regulations. However the response capability and arrangements of the local responders is currently the subject of considerable scrutiny from the community. There are areas which fall outside the aforementioned regulations, i.e. ships in transit; as well as issues that in order to be effectively addressed in accordance with the new duties under the Civil Contingencies Act 2004, will require considerable resource inputs by the local authority.

The emergency planning options and issues currently under consideration as a consequence of the LNG developments include:

1. Effective warning and informing procedures for the population along the Milford Haven waterway and in proximity of the operational sites - public pressure is seeking a 'Haven Warning System' consisting of a series of automated warning sirens linked to a central control point. A national working body is currently reviewing the effectiveness and applicability of the different warning techniques and it would be wished to adopt the best practice recommendations from this group.
2. Effective risk communication strategy. One of the aims of effective emergency planning will be to provide reassurance on the actual risk potential and to demonstrate that robust measures are in place to mitigate and respond to any incidents, backed up by significant training and exercising to demonstrate effective competence on the part of the companies and responders.
3. A possible need has been identified for enhanced 24 hour emergency cover and to ensure a timely reaction to any incidents.
4. Connected with the above, an operational control room dedicated for emergency purposes may be required, with access to resilient communication systems and necessary technology to manage and co-ordinate the response to any incident.
5. In the context of a potentially increased catastrophic risk, the provision of equipment and training for the undertaking of

large-scale evacuations, along with the establishment of rest centres requires detailed review.

6. An adequately staffed police service to deal with emergency planning and security needs associated with 'National Interest' installations.

K. PLANNING GAIN

The ability of Planning Authorities to negotiate planning gain is part of the planning process and must be directly linked to the relevant development; it would be illegal to seek to use the system to effectively "tax" an applicant, even if the intention was for wider community benefit.

This paper has sought to highlight some of the wider impacts of LNG related developments on the local community and in particular to identify a range of costs, either financial or in reduced services which may result.

There is a widespread belief locally that "The Council" should obtain greater compensatory benefits for the local community to off-set adverse impacts. Given that LNG and the energy related developments will be critical infrastructure for the UK economy, there is a need for dialogue with Government to ensure that local Council tax payers do not have to subsidise developments that occur in the wider 'National Interest'.

SECTION 4: POST CONSTRUCTION

Managing a Soft Landing For the Local Economy

Energy related developments have been a feature of the Pembrokeshire economy since the mid 1950's and have had a profound effect on local supply chains and the labour market. The closure of defence and energy installations in the 1980's and 1990's highlighted the vulnerability of the Pembrokeshire economy to international events and the County's over-dependance on agriculture (a sector in decline) and the highly seasonal tourism sector. The County's economy has been characterised by low wages, low GDP, low levels of inward investment, high levels of inactivity and the outmigration of young people.

In the last 5 years there has been a reversal of some of these trends, through the construction programmes, SME growth, public sector interventions and new opportunities for lifestyle related businesses. For the first time the Pembrokeshire area is in a significant economic growth phase which will require a review of land availability for related development.

The challenge, post LNG related construction phase, will be to encourage economic development activity which will increase wage levels and support economic diversification and on-going sustainable growth.

The Pembroke Haven area has one of the highest ratios of average earnings and average house price in Wales and the provision of affordable housing is considered to be an essential requirement of sustaining age balanced communities.

Requirement 1 - The provision of industrial units

The area has suffered from a failure of the commercial property market due to low rental levels resulting in a shortage of industrial property over many years. This has been evidenced by the work of Pembrokeshire County Council" Economy, Overview and Scrutiny Committee in its report of May 2003.

The Council has used LRF allocations and Objective 1, to build 6 x 10,000 sq ft units itself and has worked closely with the private sector to facilitate access to Objective 1 funds and with the WDA to identify additional opportunities for their Property Development Grant (PDG) support. A comprehensive PDG scheme is available in Carmarthenshire based on a partnership incorporating the County Council, WDA and Objective 1 funds.

An SME survey in 2002 indicated that lack of premises is constraining growth and this position will be further monitored through the 2005 SME survey. The lead-in time for the construction of units is typically 2-3 years.

The new Structural funds post 2006 should provide an opportunity to target areas where the commercial property market is least successful and there is evidence of need and demand.

Requirement 2 – Withybush Strategic Site

The WDA and Pembrokeshire County Council have identified Withybush as a strategic site by virtue of its central location, scale, trunk road proximity and unique airport facilities. Discussions are currently taking place with prospective developers to determine how the area can best be developed as a catalyst for wider economic activity and growth.

Central to the planning process is the conflict of use between the needs of the airport and related developments and the Pembrokeshire Showground Committee.

There is a need to resolve potential conflicts and to provide a viable substitute site for the Showground Committee in a central, easily accessible location and with appropriate funding support for the relocation.

In addition, a development masterplan for the whole site should be produced to provide a viable development package.

Requirement 3 – Bluestone

There is a danger that the delays that have resulted from the Council for the National Parks decision to take the legal action leading to Judicial Review and possible referral to the House of Lords may prejudice the Bluestone project.

Bluestone is considered to be a flagship development for West Wales and further afield that will enhance the quality of the tourism offer and target new, high value tourism markets with wider beneficial impacts.

Despite the recent welcome news that leave of appeal to the House of Lords has been refused, appropriate assurances still need to be given to the developers that funding support will be reviewed to take account of these delays.

Requirement 4 - Technium

Pembrokeshire County Council has recognised the importance of encouraging Higher Education provision and Research and Development activity in the County if it is to participate in the developing knowledge economy and encourage innovation and higher value economic development in the medium and longer term.

A strategic decision was made to concentrate LRF allocations for this purpose and through discussion and negotiation with Swansea University, the WDA and the Welsh Assembly Government the Energy Technium at Pembroke Dock has been identified as the catalyst for developing the knowledge economy in the area. The Technium will network closely and co-operate with the other Techniums in West Wales and further afield and act as a specialised centre for marine energy and other sustainable technologies, power electronics, legal and economic aspects of the energy sector, as well as innovation, entrepreneurship and as a Wales gateway for research in the energy sector.

A package of capital and revenue funding is in place, the only outstanding issue at the present time is the transfer of land from the WDA to Pembrokeshire County Council to ensure that VAT is not eligible. This is in line with the existing joint venture agreement and previous WDA commitments to participate in the project. It is essential that the whole site be reserved for spin out activities and that there is on-going investment support to maximise clustering benefits in the longer term.

Requirement 5 - Marinas

High quality tourism over an extended season is an economic objective in the Spatial Plan area. The Welsh Assembly Government and Wales Tourist Board have identified the potential importance of marine leisure through 'Catching the Wave' and have been highly supportive in seeking to bring forward a Marina in Fishguard as part of the town's regeneration strategy and as a gateway to sailing opportunities in Cardigan Bay.

The Pembroke Haven Spatial Plan area is a key part of the national strategy for marine leisure development and sensitive coastal management and will require on-going support to ensure that the area's full potential is realised. The Irish Sea coastlines are

relatively undeveloped as a sailing resource and require a strategic approach to development and marketing between WAG and the appropriate Irish bodies.

Future Structural Fund programmes include Interreg should reflect the growth and value added opportunities associated with this sector.

Requirement 6 - Regeneration

In general the quality of town centres reflect their function and level of economic well being. The quality in Pembrokeshire is generally higher where there is a significant tourism component and/or where there has been public sector interventions in road finishes, facelift schemes or streetscapes, including the involvement of Heritage Lottery funds.

The Local Authority and the WDA have worked together to help improve Pembroke, Pembroke Dock, Narberth, Fishguard, Milford Haven and Haverfordwest town centres and jointly with the National Park Authority in Tenby, Saundersfoot, St David's and Newport. WAG also supports the National Park Authority in delivering its Conservation Area Improvements and with Carmarthenshire in Whitland, St Clears and smaller communities across the area. The Milford Haven Port Authority has been a major catalyst for change at Milford Docks.

However, the environmental quality of town centres is still variable and Haverfordwest, Milford Haven, Pembroke and Pembroke Dock require significant additional enhancement.

The County Council is working in partnership to prepare plans for improvements at Haverfordwest, is jointly implementing the agreed programme at Fishguard and there are partnership arrangements in place in Tenby as part of the Wales Tourist Board's Tourism Growth Area Initiative. Joint arrangements are also in place for most other key settlements.

The lack of private sector investment, the large number of relatively small towns, the County-wide importance of tourism and prioritisation of public sector resources into more direct employment generating activity has meant that town centre regeneration has been under-funded for many years.

Work is on-going on PDF bids for funding support that demonstrate an integrated and partnership approach to town centre renewal. Longer term funding commitments and access to European aid would help to deliver more successful commercial centres and help to further stimulate investor confidence and high quality tourism. The lead-in time for complex town centre regeneration projects can be in excess of 2-3 years.

Requirement 7 - Business Support

The run down in LNG construction activity will have a knock-on effect on sub contractors and the wider supply chain. Whilst the scale cannot be quantified at present, it will be significant.

The business support strategy will need to

1. Encourage energy related diversification and value added activities. WDA have agreed to review land availability and value added opportunities.
2. Support local businesses to utilise specialist skills obtained from LNG and future projects. Energize has been established to work with local companies on this basis.
3. Encourage innovation and the wider knowledge economy through activity focused in and around the Technium.
4. Support the wider business community to consolidate, grow and become more efficient and profitable. The implications of the merger and the run-down of existing Objective 1 initiatives on business support delivery post LNG construction is as yet unclear.

The area has a particularly higher level of self employment and micro business, many of whom trade marginally and evidence suggest a lack of some key business skills.

There is a local view that a new model for business support should seek to engage more closely with private sector professional advisers and encourage better management skills and techniques.

The relatively peripheral location of the area and limited local markets require businesses capable of targeting and meeting the needs of external markets. Training and infrastructure support will be necessary if Pembrokeshire businesses are to compete effectively in wider urban markets.

The County Council is managing an SME survey on behalf of the Objective 1 partnership which will help to provide a basis for analysing and discussing the business support needs of local SMEs in the future.

SECTION 5: ACTION PLAN

Action	Action By	Time Scale

<p>Community Liaison -</p> <ol style="list-style-type: none"> 1. The scale, sensitivity and complexity of the LNG related developments require a dedicated resource to act as a point of contact for all relevant enquiries. This would ensure that the analysis of community concerns and consistency of response would be better managed. 2. A WAG and/or UK government commitment to promote National Interest arguments and engage in the PR process is necessary. 	<p>WAG, MHPA and development companies</p> <p>WAG/DTI</p>	<p>Immediate</p> <p>Immediate</p>
<p>Business Intelligence-</p> <p>That Business Eye contractors (PCC in Pembrokeshire and CCC in Carmarthenshire) be requested to set up systems to monitor and manage key impacts of LNG and other major projects as required.</p> <p>That WAG review its business intelligence gathering and disseminations arrangements to provide Welsh businesses with advance notice of major projects and supply chain opportunities</p>	<p>WAG/PCC/CCC</p>	<p>Immediate</p>
<p>Housing Needs -</p> <p>To review short term solutions to the homelessness problems and funding availability as a matter of urgency.</p> <p>To consider the longer term provision of work camps at the Pembroke Power Station site and for the Milford Power project.</p>	<p>PCC/WAG</p> <p>PCC/RWE npower</p> <p>Milford Power/WAG</p>	<p>January 2006</p> <p>On-going</p>

<p>Health -</p> <ul style="list-style-type: none"> Review major incident emergency planning processes and capacity including the needs of the ambulance service 	Health Trust/WAG	April 2006
<p>Transport Needs -</p> <ul style="list-style-type: none"> Prepare a long term strategic programme of road and rail improvements to service strategic sites along the Milford Haven waterway and linking to the A40, A477 and main line connections. Agree a short term programme of works to address priority safety and traffic management issues, including safe heavy goods and abnormal load routes. WAG to consider support for the agreed airport improvement programme at Haverfordwest. 	<p>PCC/WAG/ SWITCH</p> <p>PCC/WAG</p> <p>WAG</p>	<p>Urgent</p> <p>April 2006</p> <p>Jan.2006</p>
<p>Marine -</p> <ul style="list-style-type: none"> To agree a programme to enhance and maintain marine leisure facilities along the Milford Haven Waterway. 	MHPA	On-going
<p>Crime and Disorder -</p> <ul style="list-style-type: none"> That the assessment of LNG activity on crime and disorder be re-assessed to reflect the re-calculation of local and immigrant workers for discussion as part of the current police review. That main contractors be asked for clarification on the language skills of workers on site for site safety purposes and that any additional translation requirements be assessed to identify more cost effective options. 	<p>Police Service</p> <p>JC+ and Police Service</p>	<p>January 2006</p> <p>Immediate</p>

<p>Fire Services –</p> <ul style="list-style-type: none"> ▪ That the Mid and West Wales Fire and Rescue Service implement the identified 4-stage training programme appropriate to LNG 	<p>M&WW F&RS</p>	<p>On-going</p>
<p>Local Government –</p> <ul style="list-style-type: none"> ▪ That WAG consider a mechanism for contributing to exceptional planning costs that are incurred for projects which are clearly in the wider "UK National Interest". ▪ Emergency Planning provision should be enhanced to deal with a perceived increased risk from new developments. Funding support should be provided for this purpose on an on-going basis. 	<p>WAG/UK Government WAG/UK Government</p>	<p>April 2006 April 2006</p>
<p>Planning Gain -</p> <ul style="list-style-type: none"> ▪ That WAG review how planning gain might best operate for major projects deemed to be in the "National Interest" in liaison with Central Government, in order to avoid penalising local communities and to establish a funding mechanism for service support. 	<p>WAG/UK Government</p>	<p>Urgent</p>
<p>Soft Landing –</p>		
<p>Premises –</p> <ul style="list-style-type: none"> ▪ PCC/CCC and WAG to agree a prioritised programme for the construction of small units for direct build or prioritised PDG support ▪ WAG to ensure that the new structural funds provide support for the public and private sector development of commercial units in areas of greatest need 	<p>WAG/PCC/ CCC WAG</p>	<p>March 2006 2008</p>

<p>Withybush</p> <ul style="list-style-type: none"> Produce a master plan to demonstrate how the comprehensive redevelopment of Withybush can be achieved <p>Bluestone</p> <ul style="list-style-type: none"> That appropriate dialogue and assurance be given to the developers to take account of the unavoidable delays 	PCC/WAG	May 2006
<p>Technium</p> <ul style="list-style-type: none"> That the transfer of land from the WDA and PCC be agreed Plan for land reserve and investment programme for future spin off developments <p>Marine related</p> <ul style="list-style-type: none"> That appropriate funding be ring-fenced for the Fishguard Marina as a gateway to Cardigan Bay and the wider sailing areas of the Irish Sea That joint discussions take place with appropriate Irish interests to ensure a co-ordinated approach to development, marketing and the planning of future European programmes <p>Regeneration</p> <ul style="list-style-type: none"> That a prioritised PDF programme be agreed for key settlements within the 	<p>WAG/WDA</p> <p>WDA/PCC/ WAG</p> <p>WAG</p> <p>WAG/Irish interests</p> <p>WAG/PCC/ CCC/NPA</p>	<p>Immediate</p> <p>On-going</p> <p>On-going</p> <p>On-going</p> <p>March 2006</p>

Spatial Plan area		
Business Support		
<ul style="list-style-type: none"> WDA have undertaken to review land availability in proximity to energy installations and opportunities for down stream, complementary or value added developments Energize projects should be extended to include the period post construction phase to gather and share specialist business intelligence relating to construction opportunities and to provide on-going support to local businesses A local consensus will be sought to identify priorities for the future on receipt of the 2005 SME survey 	<p>WDA/WAG</p> <p>WAG/PBI</p> <p>PCC/WAG</p>	<p>Feb 2006</p> <p>Tbc</p> <p>June 2006</p>

Appendix 1

A Brief Study on the Property Market in Milford Haven

1 November 2005

Interviews were conducted with 5 Estate Agents in Milford with the aim of establishing what, if any evidence there is of the developments of the LNG projects at Waterston and South Hook having an effect on the property market in Pembrokeshire.

Areas examined during the discussion with each estate agent included:

Factors affecting the market

Buying to let and issues around tenancies, terms and length of tenancies

The geographical spread of any phenomenon identified

The direct influence of LNG, in terms of housing rental management and construction

"the buy to let market has gone through the roof"

This was the opening statement of one of the interviewees. With the exception of one interviewee who did not trade at a significant level at this end of the market it is clear that there is considerable price pressures in the market at the lower end up to £150K estimated by one interviewee at about 20% pa. It could be considered that the price differential between Milford and Haverfordwest property prices no longer exists and that Milford has the fastest moving property market in Pembrokeshire.

Slight resistance in the market was reported at prices of £200K upwards - for a range of factors including the time of year, although one interviewee was very happy about the state of this market in terms of the investment sector, older people down sizing and 'up-grading' their properties (moving to more prestigious areas and properties) and this had also been fuelled by the opportunity to put property into pension plans and the second home market. There is a sense of confidence in the town as far as property and the use of property as an investment is concerned.

All in all, local "first time buyers have no chance". A range of strategies are being adopted by first time buyers, including buying with friends/peer groups and parents. Those that were unable to find help to spread the cost stand no chance. The disparity in rental costs, compared to the cost of buying is prompting some construction workers to buy properties, adding to the upward price pressure in the market at the lower end. LNG could therefore be considered to have had a major effect on all sections of the property market in terms of property prices, at the low end for the manual workers through to the high end for managerial staff.

One interviewee reported a huge increase in the number of enquiries about property rental, although another indicated that it was 'lumpy', possibly recognising the different construction phases of the projects. Properties that are available for let are let on the basis of 2 tenants per room, often yielding between £800 and £1000 pcm for the landlord.

Rental prices were felt to be largely out of the scope of local people with poorly (local wage rates) paid jobs. Significant problems are faced by those with no family, people living on a single income and those with low paid jobs. One interviewee talked of comparatively old (22 - 30) young people unable to leave home and move into flats because of the cost. This was considered to have a sociological impact on the young people of the county. Reference was made by one interviewee to lower paid people unable to live in Pembrokeshire and moving out towards Tenby and even out of county to areas where rental costs were lower.

All interviewed said that stories about the eviction of tenants in order to obtain greater income from LNG clients are true, although this is not universal. There is significant evidence of landlords seeking the short term gain from the LNG projects.

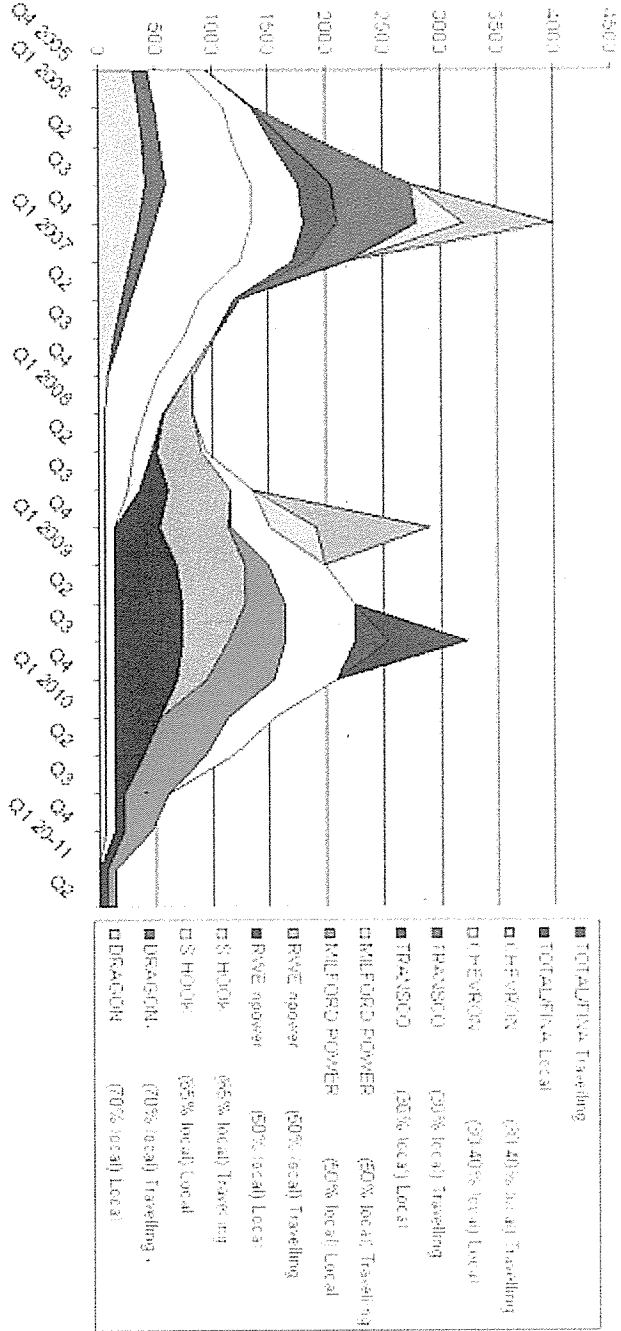
Views on the geographical spread of the heated property sector, vary, one estate agent is Fishguard reported an influence some months ago. A 5 mile radius of Milford was certain but views varied about the spread of its influence over the river to Pembroke Dock

or further afield.

A comment made by several interviewees was that the Council seemed to be "grateful" that the projects had come to Milford, yet there was this huge disruption to the social fabric of the town with no apparent gain for the local people, commensurate increase in wage rates or an increase in affluence for the lower paid sector of the economy. Reference was made by three of those interviewed that much of the rental revenue made by landlords was not returned to the local economy. The view was also expressed that the Oil companies had yet to convince the local people of the benefit to the local economy from their activities, and their lack of commitment to the local area - citing the terms that had been negotiated in Scotland between Oil companies and affected communities. On interviewee made reference to Pembrookeshire being the new Aberdeen and increased confidence in the trading and investment sector in Milford.

I did discuss with the interviewees their views on the time scale of this 'bubble'. Views expressed varied on the time scale and also even if the bubble would burst or deflate at all at the end of the LNG project. There is however an overwhelming sense abroad that 'it' is going to get worse and that the influence seen to date is only the start. More upward price pressure in both the rental sector and in property prices is certain.

Analysis of Existing and Potential Employment





Full Text Archive: North Carolina (A 51103) tel: (805) 665 3377 fax: (805) 667 5135 www.sls.org

As noted in the description of the environmental setting, several impaired waterbodies are located in the project area, including Ormond Beach, the Santa Clara River and Calleguas Creek. The Regional Water Quality Control Board will soon be developing Total Maximum Daily Loads (TMDLs) that set a maximum load of the impairing pollutant(s) that can be discharged from all sources into the impaired waterbody without exceeding water quality standards. It is possible that TMDLs will be adopted for the impaired waterbodies in the project area by the time construction begins on the proposed project. As such, the EIR must acknowledge that adoption of TMDL requirements may require revisions of the project's permits, discharge limitations or Best Management Practices (BMPs) to comply with any TMDLs put in place.

While the regulatory setting section outlines major laws, regulatory requirements and plans for water quality and sediments in Table 4.18-8, in many areas the EIR fails to state explicitly that the Applicant intends to comply with all of these requirements. For example, the Table includes a reference to Annex V of MARPOL's prohibition against the dumping of garbage into the ocean, yet nowhere does the EIR affirm that the FSRU or associated LNG carriers or supply vessels will comply with this prohibition by retaining all garbage on board and disposing of it at appropriate onshore facilities. Clearly the FSRU and associated vessels will generate some amount of garbage on board, and therefore must commit to complying with applicable regulations prohibiting the dumping of garbage. This same comment applies to the lack of an explicit commitment to comply with the International Convention on the Control of Harmful Anti-fouling Systems on Ships.

Temporary Degradation of Offshore Water Quality due to Accidental Discharges

The EIR asserts that accidental discharges of petroleum, sewage or other contaminants from vessels during offshore construction and installation activities could temporarily degrade offshore water quality. It suggests that only "small" spills might occur and "would be anticipated to be small and infrequent." This is an assumption for which no basis or parameters are provided; large and/or frequent spills may occur as well and may be significant and therefore must be addressed in the EIR and mitigated if significant.

The above comment also applies to the potential degradation of water quality from discharges of gray water or untreated sewage from construction and supply vessels. No basis is provided for the EIR's assertion that "any accidental discharge of untreated sewage would be unlikely or infrequent.... [and] would be in relatively small amounts and in the open ocean it would dissipate rapidly" (4.18-22). Furthermore, the EIR ignores the likelihood, frequency and potentially significant water quality impacts of gray water discharges. Analyses of gray water from naval vessels have demonstrated that gray water often contain contaminants such as detergents, cleaners, oil and grease, metals, pesticides, nutrients, dissolved plastics, and medical and dental waste, as well as significant concentrations of priority pollutants.¹ Recent sampling of cruise ship gray water in Alaska has shown that it also contains extremely high levels of fecal coliform bacteria and total suspended solids, as well as elevated levels of ammonia, chlorine,

¹ US Navy Naval Sea Systems Command and US EPA Office of Water. Technical Development Document: Phase I, Uniform National Discharge Standards for Vessels of the Armed Forces.

copper, nickel and zinc that often exceed water quality standards.² Because the water quality significance criteria include violations of federal, state or local water quality standards, this impact could be significant and would thus require mitigation. Channelkeeper does not understand how “the prevention and response activities in the required Facility Response Plan and SPCC Plans would reduce this impact to below its significance criteria” (4.18-23) when these plans pertain specifically to the prevention of oil pollution from a facility such as the FSRU and not other discharges such as sewage or gray water. These potentially significant impacts must be more thoroughly and accurately addressed in the EIR.

Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction

The EIR states that, “During installation of the FSRU and pipeline, approximately 10 acres (4 hectares) of seafloor would be temporarily disturbed [which] could degrade water quality because of an increase in turbidity or resuspension of contaminated sediments. The temporary increase in turbidity could reduce light penetration, discolor the ocean surface, alter the ambient water chemistry such as pH and dissolved oxygen content, or interfere with filter-feeding benthic organisms sensitive to increased turbidity. The effects on water quality would be short-term and highly localized and therefore considered less than significant” (4.18-23). Again, no basis or parameters are provided for the assertion that impacts would be short-term and highly localized, and regardless, would not be less than significant because it would exceed two significance criteria and thus require mitigation.

The EIR goes on to state that “some sediments may be contaminated with pollutants... However, there are no known locations of contaminated sediments at the mooring turret, along the subsea pipeline route or near Ormond Beach, and therefore there is no anticipated release of pollutants (see Section 4.12, “Hazardous Materials”)” (4.18-23). No studies are referenced to indicate that due diligence was done to substantiate the presence or absence of contaminated sediments. The reference to the Hazardous Materials section simply demonstrates that sediment was sampled by the Applicant from the HDB exit hole location (4.12-2), as opposed to sampling along the entire length of the pipeline route. Further information must be provided before the determination can be reliably made that no release of pollutants could be anticipated.

More information must also be provided about the increase in turbidity to be caused by anchor embedment. The EIR fails to specify the length of time this “anchor embedment period” would last and as such, how long the resultant increase in turbidity would near the seafloor would last; without this information, no determination can be made with regard to the significance of this impact. Similarly, information about the length of time required to lay the subsea pipeline must also be provided to substantiate the claim that the suspension of sediments and turbidity therefrom would not have a significant impact on water quality (4.18-24).

Channelkeeper is concerned about the potentially significant water quality impacts associated with releases of drilling fluids, and our concerns are not allayed by the EIR’s conjectural

² Alaska Cruise Ship Initiative, Interim Report, September 2000; and ADEC Commercial Passenger Vessel Environmental Compliance Program, Assessment of Cruise Ship and Ferry Wastewater Impacts in Alaska, January 2004.

assertions that the extension and dispersion of drilling fluid into water column “is more likely to occur in deeper water associated with oil and gas drilling” (4.18-24) or that for the proposed project, the temperature differential between the drilling fluid moving through “relatively” shallow formations under the sea floor is “likely” to be similar to that of seawater. Further, the use of an HDB suction pump with sufficient capacity to withdraw “the majority” of drilling fluid is not sufficiently quantified (all at 4.18-24). This, coupled with the vague mention of stationing divers at the site to vacuum released drilling fluid, does not provide a sufficient basis to support the claim that no significant impact to water quality would result.

Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids

As in many other instances throughout the water quality impacts analysis, the EIR suggests that impacts from releases of drilling fluids could *temporarily* reduce water quality but that this reduction would not be a significant impact (4.18-25). For clarity, the length of time and significance criteria for “temporary” or “short-term” degradation must be defined precisely so that potential impacts can be accurately depicted and assessed.

Channelkeeper finds that the Drilling Fluid Release Monitoring Plan as described (4.18-25 and Appendix D1) will not do much to minimize the potential for releases of drilling fluid as stated in the EIR, but rather simply lays out plans for monitoring and clean up after a release has already occurred, and as such, does not constitute sufficient mitigation. Moreover, the Plan outlines only “measures that *may* be used” once loss of drilling fluid returns exceed 40 percent (Appendix D1 at 18) or where dye or drilling fluid is detected based on Condition 1, 2 or 3 monitoring protocols (Appendix D1 at 20); there is no assurance that these measures *will* be used, nor information provided on how or who will make these decisions.

Short-Term Increase in Erosion due to Construction Activities

While erosion and sedimentation are the most common and problematic impacts on water quality from construction activities, Channelkeeper notes that there are several other construction-related pollutants that could potentially degrade water quality, including solid and sanitary wastes, phosphorous, nitrogen, pesticides, oil and grease, concrete truck washout, construction chemicals and construction debris.³ The EIR must examine and satisfactorily demonstrate that no significant impacts from these additional construction-related pollutants will occur as a result of the proposed project.

The EIR notes that if hydrostatic testing water is discharged to land, certain BMPs would be implemented. It is impossible to ascertain from the simple yet oddly numbered list of BMPs (“BMPs 1-01 through 1-08, ‘Sediment Controls,’ BMP 3-01 ‘Dewatering Operations,’ and BMP 4-01 through 4-08, ‘Erosion and Soil Stabilization’”) whether these will be sufficient to protect water quality. A more detailed description of these activities, rather than a numbered list referring to an unappended document (Sempra 2002), is necessary to make that determination.

³ US Environmental Protection Agency, “Storm Water Phase II Final Rule: Construction Site Runoff Control Minimum Control Measure.” EPA 833-F-008, Fact Sheet 2.6, January 2000.

Further, Channelkeeper questions how and where (e.g., on site?) such water would be tested prior to discharge, and to what NPDES permit discharge requirements it will be compared to determine compliance.

Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and Other Discharges that Do Not Meet Water Quality Standards

The EIR's estimate of the volume of blackwater to be generated aboard the FSRU is far too low. Estimates from the US Navy and EPA indicate that blackwater is generated at a rate of between 5-10 gallons per person per day.⁴ From the FSRU only, this would equate to 150-300 gallons per day or 54,750-109,500 gallons per year. The use of a Marine Sanitation Device (MSD) is indeed required, yet extensive sampling of cruise ship blackwater discharges in Alaska have demonstrated that MSDs routinely fail to function properly and consistently generate effluent with fecal coliform counts and levels of total suspended solids thousands of times greater than the federal standards allow (200 fecal coliform colonies per 100 ml and 150 mg/l of total suspended solids, see 40 CFR 140). Treated blackwater samples also showed consistently high concentrations of ammonia, copper, nickel, zinc, and chemical oxygen demand (COD).⁵

Moreover, the EIR must also consider the impact of considerable additional volumes of blackwater (and other liquid wastes such as gray water, bilge water and deck drainage) from all the additional LNG carriers and supply vessels which will be traveling to and from the FSRU and which could cumulatively have significant detrimental impacts to water quality and therefore would require mitigation.

The EIR fails to explain how gray water would be treated prior to discharge. As described in greater detail above, gray water has been proven to contain numerous contaminants.⁶ It states that "the FSRU could accidentally release gray water or contaminated deck drainage before it is treated adequately to meet water quality standards and the conditions of the NPDES permit. In addition, accidental spills of materials used on the FSRU could occur" (4.18-31). Because the significance criteria include violations of federal, state or local water quality standards, this impact *would* be significant and must therefore be mitigated.

With regard to storm water, the EIR claims that all rainwater and deck washdown water would be allowed to flow off the FSRU unimpeded, except in areas where it could be contaminated with oil. Unfortunately, the EIR fails to identify what areas those are and how much surface area they cover. While it refers to secondary containment for these areas, the EIR fails to state

⁴ Presentations by US Navy and US EPA representatives at Pacific States/British Columbia Oil Spill Task Force Roundtable, "On Board with Cruise Ship Pollution Prevention," January 21, 2004, San Diego, CA, at http://www.oilspilltaskforce.org/docs/meeting_notes/SummaryNotesCruiseshipRt2.pdf.

⁵ Science Advisory Panel & Alaska Department of Environmental Conservation (ADEC) Commercial Passenger Vessel Environmental Compliance Program, The Impact of Cruise Ship Wastewater Discharge on Alaska Waters, November 2002; and ADEC Commercial Passenger Vessel Environmental Compliance Program, Assessment of Cruise Ship and Ferry Wastewater Impacts in Alaska, January 2004.

⁶ US Navy Naval Sea Systems Command and US EPA Office of Water. Technical Development Document: Phase I, Uniform National Discharge Standards for Vessels of the Armed Forces; and Alaska Cruise Ship Initiative, Interim Report, September 2000; and ADEC Commercial Passenger Vessel Environmental Compliance Program, Assessment of Cruise Ship and Ferry Wastewater Impacts in Alaska, January 2004.

explicitly that secondary containment will be installed around all areas where stormwater or deck washdown water may come into contact with oil. This is an important measure that must be included in the proposed project. Further, the EIR states that water collected in secondary containment areas will be stored in tanks to be monitored for oil content, and “if determined to be clean,” would be discharged directly to the ocean (2-29), without explaining how this determination is to be made and according to what standard. The Water Quality section, on the other hand, states that water within secondary containment areas unconditionally would be processed through an oil/water separator prior to discharge. In order to ensure no significant impacts occur, the EIR must state explicitly that no stormwater or deck washdown water from secondary containment areas will be discharged prior to processing through an oil/water separator whose effluent must not have an oil content in excess of 15 parts per million (ppm), as required by Annex I of the International Convention for the Prevention of Pollution from Ships (MARPOL), the federal Oil Pollution Act and associated regulations.

Additionally, there appears to be a discrepancy between the estimated volume of rain that would flow onto the FSRU; on page 2-29 the estimate is 30 gallons or 0.1 m³ per minute, whereas on page 4.18-29 the estimate is 10 gallons or 0.04 m³ per minute. This discrepancy must be clarified and the correct volume accurately portrayed and assessed.

In addition, the EIR fails to affirm that the proposed project will comply with Annex I of the International Convention on the Control of Harmful Anti-fouling Systems on Ships by ensuring that the FSRU and LNG carriers will not bear anti-fouling/biocide compounds on their hulls or external parts or surfaces, or will bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling system.

Additional Impacts

Temperature: The EIR estimates that cooling water discharges from the FSRU will be 28.8 degrees Fahrenheit warmer than the ambient sea temperature (4.7-51). This will violate the State’s Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) by exceeding the Plan’s limitation that “the maximum temperature of thermal waste discharge shall not exceed the natural temperature of receiving water by more than 20 degrees Fahrenheit.” As such, this impact exceeds the significance criteria by violating a state water quality standard or objective and by changing background levels of chemical and physical constituents, and therefore must be mitigated.

Accidental Discharges from Increased Vessel Traffic Associated with Proposed Project: The Water Quality and Sediments section of the EIR completely fails to assess the potentially significant impacts that could result from the substantial increase in shipping traffic associated with the proposed project. According to the Marine Traffic Section, the proposed project would employ numerous vessels in the installation of the mooring system, FSRU mooring and pipeline construction, and would further generate numerous LNG carrier trips (208-260 Transpacific transits and 416-468 transits per year each to and from Port Hueneme) as well as 52 round-trip tugboat transits and 156-182 round-trip LNG carrier crew vessels from Port Hueneme to the FSRU every year. Each and every one of these vessel trips increases the potential for significant

impacts to water quality through discharges of petroleum, sewage, gray water, bilge water and deck washdown water, not to mention the additional impacts on air quality and marine biological resources. These additional vessel trips could result in significant degradation of water quality due to discharges of petroleum, blackwater, gray water and bilge water from LNG carriers or supply vessels and therefore must be addressed in the EIR.

Atmospheric Deposition of Air Pollutants

Another additional water quality impact that will result from the proposed project is that of atmospheric deposition of pollutants from air emissions due to the additional vessel traffic. As noted by the Environmental Defense Center in their December 20, 2004 comment letter, atmospheric deposition is a potentially significant source of nutrients and toxic contaminants to surface and coastal waters in the project area, as supported by a recent study by the Southern California Coastal Water Research Project in Santa Monica Bay.⁷ This potentially significant water quality impact must be evaluated in the EIR.

This concludes Santa Barbara Channelkeeper's comments on the Revised Draft EIR for the Cabrillo Port LNG Deepwater Port. Based on the above analysis, we believe that the proposed project could have numerous significant impacts on water quality in the project area and that as laid out in the Revised Draft EIR, are not adequately evaluated, nor sufficient mitigation proposed. As required by both NEPA and CEQA, regulatory agencies and citizens must have all the information necessary to fully understand the array of potential environmental impacts of a proposed project on which to base the decision of whether or not to approve its implementation. As currently drafted, the Revised Draft EIR does not provide such a basis.

Thank you for your consideration of the above comments. Please feel free to contact us should you have any questions.

Sincerely,

Kira Schmidt
Executive Director
Santa Barbara Channelkeeper

⁷ Letter from Environmental Defense Center to Lt. Ken Kusano and Cy Oggins regarding the Cabrillo Port Liquefied Natural Gas Deepwater Port Draft EIS/EIR, December 20, 2004, at 75-76; and Stolzenbach, KD, Lu, R, Xiong, C, Friedlander, S, Turco, R, Schiff, K, Tiefenthaler, L. (September 2001). Measuring and Modeling of Atmospheric Deposition on Santa Monica Bay and the Santa Monica Bay Watershed. Final Report to the Santa Monica Bay Restoration Project.

State Water Resources Control Board

WATER QUALITY CONTROL PLAN
FOR CONTROL OF
TEMPERATURE IN THE
COASTAL AND INTERSTATE WATERS
AND ENCLOSED BAYS AND ESTUARIES
OF CALIFORNIA¹

DEFINITION OF TERMS

1. Thermal Waste - Cooling water and industrial process water used for the purpose of transporting waste heat.
2. Elevated Temperature Waste - Liquid, solid, or gaseous material including thermal waste discharged at a temperature higher than the natural temperature of receiving water. Irrigation return water is not considered elevated temperature waste for the purpose of this plan.
3. Natural Receiving Water Temperature - The temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.
4. Interstate Waters - All rivers, lakes, artificial impoundments, and other waters that flow across or form a part of the boundary with other states or Mexico.
5. Coastal Waters - Waters of the Pacific Ocean outside of enclosed bays and estuaries which are within the territorial limits of California.
6. Enclosed Bays - Indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays will include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to the following: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.
7. Estuaries and Coastal Lagoons - Waters at the mouths of streams which serve as mixing zones for fresh and ocean water during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to

¹ This plan revises and supersedes the policy adopted by the State Board on January 7, 1971, and revised October 13, 1971, and June 5, 1972.

extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge and appropriate areas of Smith River, Klamath River, Mad River, Eel River, Noyo River, and Russian River.

8. Cold Interstate Waters - Streams and lakes having a range of temperatures generally suitable for trout and salmon including but not limited to the following: Lake Tahoe, Truckee River, West Fork Carson River, East Fork Carson River, West Walker River and Lake Topaz, East Walker River, Minor California-Nevada Interstate Waters, Klamath River, Smith River, Goose Lake, and Colorado River from the California-Nevada stateline to the Needles-Topoc Highway Bridge.
9. Warm Interstate Waters - Interstate streams and lakes having a range of temperature generally suitable for warm water fishes such as bass and catfish. This definition includes but is not limited to the following: Colorado River from the Needles-Topoc Highway Bridge to the northerly international boundary of Mexico, Tijuana River, New River, and Alamo River.
10. Existing Discharge - Any discharge (a) which is presently taking place, or (b) for which waste discharge requirements have been established and construction commenced prior to the adoption of this plan, or (c) any material change in an existing discharge for which construction has commenced prior to the adoption of this plan. Commencement of construction shall include execution of a contract for onsite construction or for major equipment which is related to the condenser cooling system.

Major thermal discharges under construction which are included within this definition are:

- A. Diablo Canyon Units 1 and 2, Pacific Gas and Electric Company.
 - B. Ormond Beach Generating Station Units 1 and 2, Southern California Edison Company.
 - C. Pittsburg No. 7 Generating Plant, Pacific Gas and Electric Company.
 - D. South Bay Generating Plant Unit 4 and Encina Unit 4, San Diego Gas and Electric Company.
11. New Discharge - Any discharge (a) which is not presently taking place unless waste discharge requirements have been established and construction as defined in Paragraph 10 has commenced prior to adoption of this plan or (b) which is presently



taking place and for which a material change is proposed but no construction as defined in Paragraph 10 has commenced prior to adoption of this plan.

12. Planktonic Organism - Phytoplankton, zooplankton and the larvae and eggs of worms, molluscs, and arthropods, and the eggs and larval forms of fishes.
13. Limitations or Additional Limitations - Restrictions on the temperature, location, or volume of a discharge, or restrictions on the temperature of receiving water in addition to those specifically required by this plan.

SPECIFIC WATER QUALITY OBJECTIVES

1. Cold Interstate Waters

- A. Elevated temperature waste discharges into cold interstate waters are prohibited.

2. Warm Interstate Waters

- A. Thermal waste discharges having a maximum temperature greater than 5°F above natural receiving water temperature are prohibited.
- B. Elevated temperature wastes shall not cause the temperature of warm interstate waters to increase by more than 5°F above natural temperature at any time or place.
- C. Colorado River - Elevated temperature wastes shall not cause the temperature of the Colorado River to increase above the natural temperature by more than 5°F or the temperature of Lake Havasu to increase by more than 3°F provided that such increases shall not cause the maximum monthly temperature of the Colorado River to exceed the following:

January	60°F	July	90°F
February	65°F	August	90°F
March	70°F	September	90°F
April	75°F	October	82°F
May	82°F	November	72°F
June	86°F	December	65°F

- D. Lost River - Elevated temperature wastes discharged to the Lost River shall not cause the temperature of the receiving water to increase by more than 2°F



when the receiving water temperature is less than 62°F, and 0°F when the receiving water temperature exceeds 62°F.

- E. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

3. Coastal Waters

A. Existing discharges

- (1) Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance.

B. New discharges

- (1) Elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.
- (2) Elevated temperature wastes shall be discharged a sufficient distance from areas of special biological significance to assure the maintenance of natural temperature in these areas.
- (3) The maximum temperature of thermal waste discharges shall not exceed the natural temperature of receiving waters by more than 20°F.
- (4) The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any complete tidal cycle.
- (5) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

4. Enclosed Bays

A. Existing discharges

- (1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.



B. New discharges

- (1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses. The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving waters by more than 20°F.
- (2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

5. Estuaries

A. Existing discharges

- (1) Elevated temperature waste discharges shall comply with the following:
 - a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.
 - b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
 - c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
 - d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.
- (2) Thermal waste discharges shall comply with the provisions of 5A (1) above and, in addition, the maximum temperature of thermal waste discharges shall not exceed 86°F.

B. New discharges

- (1) Elevated temperature waste discharges shall comply with item 5A(1) above.



- (2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.
- (3) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

GENERAL WATER QUALITY PROVISIONS

1. Additional limitations shall be imposed in individual cases if necessary for the protection of specific beneficial uses and areas of special biological significance. When additional limitations are established, the extent of surface heat dispersion will be delineated by a calculated 1 1/2°F isotherm which encloses an appropriate dispersion area. The extent of the dispersion area shall be:
 - A. Minimized to achieve dispersion through the vertical water column rather than at the surface or in shallow water.
 - B. Defined by the Regional Board for each existing and proposed discharge after receipt of a report prepared in accordance with the implementation section of this plan.
2. The cumulative effects of elevated temperature waste discharges shall not cause temperatures to be increased except as provided in specific water quality objectives contained herein.
3. Areas of special biological significance shall be designated by the State Board after public hearing by the Regional Board and review of its recommendations.
4. Regional Boards may, in accordance with Section 316(a) of the Federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR 122, grant an exception to Specific Water Quality Objectives in this Plan. Prior to becoming effective, such exceptions and alternative less stringent requirements must receive the concurrence of the State Board.
5. Natural water temperature will be compared with waste discharge temperature by near-simultaneous measurements accurate to within 1°F. In lieu of near-simultaneous measurements, measurements may be made under calculated conditions of constant waste discharge and receiving water characteristics.

IMPLEMENTATION



1. The State Water Resources Control Board and the California Regional Water Quality Control Boards will administer this plan by establishing waste discharge requirements for discharges of elevated temperature wastes.
2. This plan is effective as of the date of adoption by the State Water Resources Control Board and the sections pertaining to temperature control in each of the policies and plans for the individual interstate and coastal waters shall be void and superseded by all applicable provisions of this plan.
3. Existing and future dischargers of thermal waste shall conduct a study to define the effect of the discharge on beneficial uses and, for existing discharges, determine design and operating changes which would be necessary to achieve compliance with the provisions of this plan.
4. Waste discharge requirements for existing elevated temperature wastes shall be reviewed to determine the need for studies of the effect of the discharge on beneficial uses, changes in monitoring programs and revision of waste discharge requirements.
5. All waste discharge requirements shall include a time schedule which assures compliance with water quality objectives by July 1, 1977, unless the discharger can demonstrate that a longer time schedule is required to complete construction of necessary facilities; or, in accordance with any time schedule contained in guidelines promulgated pursuant to Section 304(b) of the Federal Water Pollution Control Act.
6. Proposed dischargers of elevated temperature wastes may be required by the Regional Board to submit such studies prior to the establishment of waste discharge requirements. The Regional Board shall include in its requirements appropriate postdischarge studies by the discharger.
7. The scope of any necessary studies shall be as outlined by the Regional Board and shall be designed to include the following as applicable to an individual discharge:
 - A. Existing conditions in the aquatic environment.
 - B. Effects of the existing discharge on beneficial uses.
 - C. Predicted conditions in the aquatic environment with waste discharge facilities designed and operated in compliance with the provisions of this plan.
 - D. Predicted effects of the proposed discharge on beneficial uses.
 - E. An analysis of costs and benefits of various design alternatives.



- F. The extent to which intake and outfall structures are located and designed so that the intake of planktonic organisms is at a minimum, waste plumes are prevented from touching the ocean substrate or shorelines, and the waste is dispersed into an area of pronounced along-shore or offshore currents.
8. All waste discharge requirements adopted for discharges of elevated temperature wastes shall be monitored in order to determine compliance with effluent or receiving water temperature (or heat) requirements.

Furthermore, for significant thermal discharges as determined by the Regional Board or State, Regional Boards shall require expanded monitoring programs, to be carried out either on a continuous or periodic basis, designed to assess whether the source continues to provide adequate protection to beneficial uses (including the protection and propagation of a balanced indigenous community of fish, shellfish, and wildlife, in and on the body of water into which the discharge is made). When periodic expanded monitoring programs are specified, the frequency of the program shall reflect the probable impact of the discharge.

9. The State Board or Regional Board may require a discharger(s) to pay a public agency or other appropriate person an amount sufficient to carry out the expanded monitoring program required pursuant to paragraph 8 above if:
- A. The discharger has previously failed to carry out monitoring programs in a manner satisfactory to the State Board or Regional Board, or;
 - B. More than a single facility, under separate ownerships, may significantly affect the thermal characteristics of the body of water, and the owners of such facilities are unable to reach agreement on a cooperative program within a reasonable time period specified by the State Board or Regional Board.



PZENTNER:shalbert:1-16-98
d:phil:thermpln.doc

